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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/673,398

09/30/2003

Si-Hyun Song

8734.239.00 US

3749

30827

7590

03/19/2008

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EXAMINER

ADAMS, GREGORY W

ART UNIT

PAPER NUMBER

3652

MAIL DATE

DELIVERY MODE

03/19/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/673,398	Applicant(s) SONG, SI-HYUN	
	Examiner GREGORY W. ADAMS	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 26 is/are pending in the application.
- 4a) Of the above claim(s) 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Newly submitted claim 26 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-13, drawn to a cassette device, classified in class 206, subclass 711.
- II. Claim 26, drawn to a method of supporting mother substrates, classified in class 414, subclass 801.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the process could be practiced by a vertically movable conveyors, e.g. stacked comprising a buffer and/or the apparatus could be used as a display case.

Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;

- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention.**

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 26 is withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

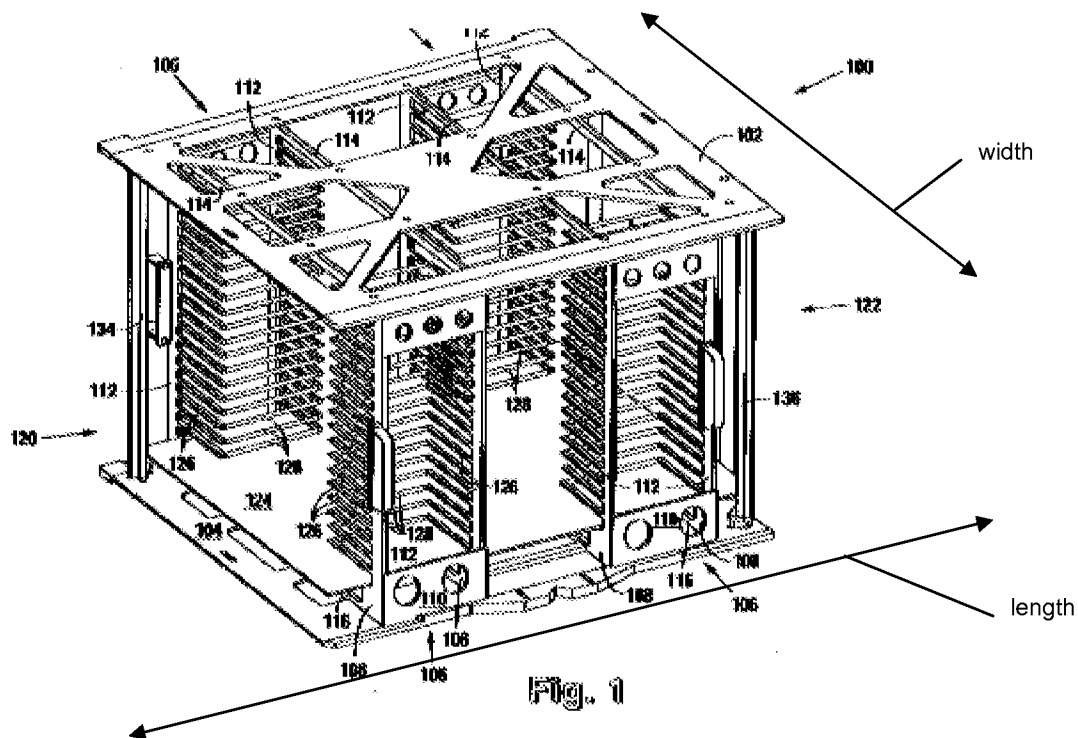
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 & 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Babbs (US 5,823,361) (previously cited) in view of in view of Betsuyaku (US 6,006,919) (previously cited).

With respect to claims 1, 3 & 7-13, Babbs discloses a cassette device comprising-

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- a frame 108 having a length greater than a width as well as a height, wherein a length and width of a frame correspond to a length of width of inserted mother substrates, respectively (see FIG. 1 reproduced below);
- a first support members 126 protruding from a first side of a frame and second support members 126 protruding from a second opposing side of a frame;
- first supporting bars 128 connected to first support members and second supporting bars 128 connected to second support members, wherein supporting bars are disposed a distance from a frame,
- wherein first and second supporting bars 128 contact and support a lower surface of an inserted mother substrates along first and second parallel sides of an inserted mother substrates at opposing parallel regions of a first lower surface, wherein first supporting bars are configured slightly spaced from each other and second supporting bars are slightly spaced (e.g. in a vertical sense) from each other, so that first and second supporting bars are in contact with substantially a whole width of the of first and second parallel sides of inserted mother substrates to uniformly distribute a load to the patterned spacers in substantially the whole width of the first and second parallel sides of the inserted mother substrates across the substrate.



Babbs does not disclose rectangular supporting bars connecting two support members. Babbs recognizes that mother glass boards (e.g. substrates) are “generally flat, rectangular plates made of amorphous glass with various sizes, including relatively large FPDs measuring 550 millimeters (mm) by 650 mm by 1.1 mm thick. The FPD industry trend, however, is towards larger substrates measuring 700 mm by 1000 mm, 850 mm by 1050 mm, and larger. Further, the trend is towards thinner substrates having thicknesses of 0.7 mm.” C1/L12. Betsuyaku discloses a liquid crystal display panel cassette including rectangular supporting bars (FIG. 4: 3) that per international agreement improves “durability, sealing performance, good anti-staining performance, unmanned use, automation, ease of cleaning, etc.” C1/L28. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made

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to modify the apparatus of Babbs to include rectangular supporting bars as per the teachings of Betsuyaku, to improve LCD cassette performance.

Babbs does not disclose supporting bars disposed at a distance of about 170mm from a frame. However, Babbs discloses supporting bars of some distance from a frame, recognizes that sagging substrates require longitudinal support, and that the industry trend is coordinate cassette size to substrates having dimensions such as 650mm, 550mm, 700mm, 1000mm, 850mm, 1050mm, and thicknesses of 1.1mm & .7mm. C4/L26-40. A skilled artisan knowing Babbs' apparatus solves sag which is affected by width of supports would know to size Babb's apparatus at any size that prevents sag, including 170mm, a dimension well within the range of sizes Babb's support members are designed to support. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Babbs to include supporting bars disposed at a distance of about 170mm from a frame as is well known when supporting large substrates and preventing sag.

With respect to claims 4-6, Babbs discloses a frame, support members 126 protruding from opposing sides, and two support bars 128 disposed at a distance from a frame 112 and connecting two support members 126 configured to distributed a load across a substrate, and does not explicitly disclose supporting liquid crystal display panels including thin film arrays and color filters but Babbs discloses supporting large glass substrates by using support members connected by support bars to minimize sag. C1. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Babbs' cassette to store liquid crystal display

panels comprising thin transistor arrays and color filters as Babbs discloses the apparatus which could function to support large objects. Babbs does not disclose rectangular supporting bars connecting two support members. Betsuyaku discloses a liquid crystal display panel cassette including rectangular supporting bars (FIG. 4: 3) that per international agreement improves "durability, sealing performance, good anti-staining performance, unmanned use, automation, ease of cleaning, etc." C1/L28.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Babbs to include rectangular supporting bars as per the teachings of Betsuyaku, to improve LCD cassette performance.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Babbs, Betsuyaku and further in view Stadler et al. (US 5,236,548) (previously cited).

Babbs discloses a frame, support members 126 protruding from opposing sides, and two support bars 125 connecting two support members 126. Babbs does not disclose acetal resin. Referring to FIGS. 1-2 Stadler et al. disclose support bars 8 of acetal resin which is resistant to cleaning agents and etchants and that do not contaminate substrate. Col. 5, Ins. 39-46. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Babbs' supports to include acetal resin, as per the teachings of Stadler et al., such that supports resist cleaning agents and etchants and will not contaminate substrates.

Response to Arguments

Applicant's arguments filed Feb. 5, 2008 have been fully considered but they are not persuasive. As noted above, Babbs bars are at least spaced from each other in a vertical sense, and a skilled artisan would know that 170mm in a width sense between support bars is an obvious variant given that substrate sizes are at least 550mm wide necessitating some spread to prevent sag, and feature easily discovered through trial and error.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY W. ADAMS whose telephone number is (571)272-8101. The examiner can normally be reached on M-Th, 8:30am-5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saul Rodriguez can be reached on (571) 272-7097. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Saúl J. Rodríguez/
Supervisory Patent Examiner, Art
Unit 3652

/G. W. A./
Primary Examiner, Art Unit 3652
3/11/2008